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Title : The use of fatty acid analysis to detect variations in the diet of harbour porpoise (Phocoena phocoena)

Category : Ecology

Student : Doctoral

Preferred Format : Either Oral or Poster Presentation

Abstract : Changes in the diet of marine mammals can have important consequences for individual health and population status, therefore it is important to determine and understand these variations. The majority of information on the diet of harbour porpoise (Phocoena phocoena) is based on stomach contents analysis of stranded or by-caught animals. Results can be limited to detecting the recent diet and may also be biased towards prey species with robust hard parts that remain in the stomach. Fatty acid analysis of blubber samples offers an alternative source of information on diet, which avoids some of the biases of stomach contents analysis.

Seasonal, regional and individual variation in the diet of harbour porpoise was studied using fatty acid analysis of the inner blubber layer from animals stranded around Scotland between 2000 and 2003. The objective was to assess sources of variation in the fatty acid profiles of Scottish harbour porpoise and compare the variations with the fatty acid profiles of putative prey species.

The variations observed in the fatty acid profiles of Scottish harbour porpoise, of different sex, body size-class, region and season, appear to be related to differences in diet. Firstly, results were consistent with trends in diet previously determined from stomach content analysis. Secondly, the fatty acids that showed the most variability are thought to be dietary in origin and could be related to differences in prey fatty acid signatures. The results suggest that fatty acid analysis is a useful method of assessing variation in the diet of harbour porpoise.